

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (previously presented): A device for analyzing the positional accuracy of a fold of printed products conveyed in a shingle stream comprising:

sensors detecting a position of the fold relative to markings applied to the printed product;
and

an evaluation device connected to the sensors for determining a time lag between two signals of at least one of the sensors, the signals corresponding to a contrast change at the markings;

the signals corresponding to the contrast change alternately indicating a front edge of a first marking of the markings or a folding edge of another printed product covering the first marking.

Claim 2 (canceled).

Claim 3 (original): The device as recited in claim 1 wherein the markings include at least two light or dark areas.

Claim 4 (original): The device as recited in claim 3 wherein the markings are rectangular.

Claim 5 (original): The device as recited in claim 3 wherein one of the light or dark areas is on one side of the printed product and the other of light or dark areas is on the other side of the printed product.

Claim 6 (previously presented): The device as recited in claim 1 wherein the sensors include two sensors assigned to the two of the markings, and the evaluation device determines the position of the fold by comparing the time lag measured for each marking.

Claim 7 (previously presented): The device as recited in claim 6 wherein the evaluation device ascertains the position of the fold as a function of the measured time lag multiplied by a speed of the printed product.

Claim 8 (previously presented): The device as recited in claim 5 wherein the two light or dark areas are at the edges of the sides of the printed product.

Claim 9 (previously presented): The device as recited in claim 1 wherein the markings are imprinted at a fixed distance from a nominal fold line, the fixed distance being larger than a distance required for detection and smaller than a non-overlapped free space of the printed product, so that a part of the marking of the printed product is covered and another part is not covered by another printed product

Claim 10 (previously presented): The device as recited in claim 1 wherein a length of the marking is selected so that a part of the marking is covered by a following printing product.

Claim 11 (original): The device as recited in claim 7 wherein the speed is determined as a function of a mean speed of the printed products conveyed on conveying elements, the mean speed being calculated by averaging time lag measurements for a plurality of successive printed products.

Claim 12 (original): The device as recited in claim 11 wherein the evaluation device includes software for determining at least one of the mean speed, the time lag, and an analysis for determining the folding accuracy.

Claim 13 (original): The device as recited in claim 12 wherein the analysis for determining the folding accuracy includes detection of at least one of non-central fold, oblique fold and completely incorrect fold errors.

Claim 14 (previously presented): The device as recited in claim 13 wherein the analysis is a function of the marking.

Claim 15 (original): The device as recited in claim 14 wherein data for the folding accuracy is read out and utilized for correcting the position of the fold.

Claim 16 (previously presented): The device as recited in claim 12 wherein the software includes a closed-loop control circuit for controlling and correcting the position of the fold.

Claim 17 (canceled).

Claim 18 (original): A folding apparatus comprising a device for analyzing an accuracy of a fold produced via the folding apparatus under a given configuration at a given speed according to claim 1.

Claim 19 (previously presented): A device for analyzing the positional accuracy of a fold of printed products conveyed in a shingle stream comprising:

a sensor producing signals, the signals being a function of a plurality of contrast changes between dark markings on the printed products and light areas of the printed products; and

an evaluation device connected to the sensor for determining a time lag between two of the plurality of contrast changes;

wherein the plurality of contrast changes includes a first contrast change indicating a lead edge of a first of the dark markings on a first printed product, and a second contrast change indicating a folding edge of a second printed product covering the first dark marking.

Claim 20 (new): A printed product conveyor comprising:

a conveying element;

a first folded printed product being conveyed by the conveying element in a conveying direction and having a first marking extending in the conveying direction and having a first marking length in the conveying direction;

a second folded printed product being conveyed by the conveying element in a shingled manner so a fold of the second folded printed product covers the first marking to define an uncovered portion of the first marking, the uncovered portion of the first marking being shorter in the conveying direction than the first marking length, the uncovered portion having a front edge and a rear edge;

the second printed product having a second marking with a second front edge extending in the conveying direction;

a sensor sensing the front edge of the uncovered portion, the rear edge of the uncovered portion and the second front edge of the second marking; and

an evaluation device receiving an input from the sensor.

Claim 21 (new): The printed product conveyor as recited in claim 20 wherein the evaluation device determines a position of the fold of the second printed product with respect to the first printed product as a function of the sensor input.

Claim 22 (new): The printed product conveyor as recited in claim 20 further comprising a second sensor and a further marking on the first folded printed product, the second sensor sensing the further marking.

Claim 23 (new): The printed product conveyor as recited in claim 20 wherein the sensor is adjustable in all directions.

Claim 24 (new): The printed product conveyor as recited in claim 20 wherein the conveying element is a conveyor band.